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ENTOMOLOGY.¹

A LABORATORY OF EXPERIMENTAL ENTOMOLOGY.—Reference has already been made in these Notes (*Ante*, p. 261) to a probable increase in entomological investigations, due to the establishment by the United States Government of an agricultural experiment station in each of the States, in connection with the agricultural colleges. The New York Station has been organized at Cornell University. Provision has been made here for experiments in general agriculture, chemistry, veterinary science, botany, entomology, and horticulture. The Station Council has been very liberal in its provisions for experiments in entomology. A separate building for this purpose is being erected, and provision has been made for thoroughly equipping it.

As this building is novel, both as regards its structure and the purpose for which it is intended, a brief account of it may be of interest. It consists of two parts—a laboratory building and a vivary. The former is a two-story cottage, containing a laboratory for the experimenter and his artist, a shop and laboratory for an assistant, a room for photographic work, quarters for a janitor, store-room and basement. The vivary is in the form of an ordinary botanical conservatory, sixty feet in length. This is divided by a transverse partition into two rooms of equal size. One of these is to be used as a hot-house; the other is to be kept as nearly as possible at the temperature of the outside air. The purpose of this vivary is to enable the experimenter to keep the insects that he is studying alive upon growing plants and to conduct experiments with insecticides, where all of the conditions can be controlled. Especial apparatus for carrying on this work has been devised and is being constructed.

One of these devices is an arrangement by means of which insects living upon roots of plants can be observed continuously without disturbing them. Another is intended to aid in the study of the relations that exist between ants and plant-lice. Others are for experiments in the use of insecticides. Descriptions of some of these devices will be published later.—*J. H. Comstock.*

AQUATIC LEPIDOPTEROUS LARVÆ.—A number of instances are on record of Lepidopterous larvæ that normally descend beneath the surface of water in order to feed upon submerged plants. The best-known of these in this country is the species of *Argema* that infest the leaf-stalks of pond-lilies. The habits of this insect were described by the writer several years ago.² Although these insects

¹ This department is edited by Prof. J. H. Comstock, Cornell University, Ithaca, N. Y., to whom communications, books for notice, etc., should be sent.

² *Papilio*. Vol. I., p. 147.

spend a large part of the time in water, they are obliged to come to the surface at intervals for a supply of fresh air. There are, however, a few Lepidopterous larvæ that are truly aquatic. One was described by Baron de Geer more than one hundred years ago.¹ This is the European *Paraponyx stratiotalis*. Another was described in 1884 by Wilh. Müller-Blumenau.² This is a Brazilian insect, *Cataclysta pyropalis*, which, like the preceding, belongs to the family Pyralidæ.

We have just received an account of a third species, which is described by J. Wood-Mason in a small pamphlet, entitled *Report on the Paraponyx oryzalis, an Insect-pest of the Rice-Plant in Burma*. This pamphlet was published in Calcutta in 1885. The insect described in it is supposed to be a congener of the European species referred to above, although only the larva and pupa have been described. The caterpillar is about seven millimetres in length and is abundantly supplied with tracheal gills. These are in the form of filaments, arranged in little bundles or tufts. There are four longitudinal rows of these tufts, extending nearly from one end of the body to the other; that is, two rows on each side of the body—one above the spiracles, the other below them.

THE ORTHOPTERA OF NEW ENGLAND.—Professor Fernald has just published a manual of the Orthoptera of New England,³ in which all the species found in that section are carefully described. Analytical keys are given for the determination of families, sub-families, and genera, and, wherever necessary, there are tables of species. The work is an important addition to the series of hand-books prepared by this author. It will do much towards popularizing a knowledge of this very important order of insects.

PROCEEDINGS OF THE ENTOMOLOGICAL SOCIETY OF WASHINGTON.—Among the recently published works on our table is No. 2, of Vol. I., of the above-named publication. This number includes the proceedings of this Society during the years 1886 and 1887. It contains a large number of biological and morphological notes, some of them of great interest. The most important of these is the annual address of the President, Mr. L. O. Howard, entitled *A Brief Consideration of Certain Points in the Morphology of the Family Chalcididæ*. The address is much more important than would be indicated by its title, being, in fact, a careful discussion of the external anatomy of these insects.

¹ Mémoires pour servir à l'Hist. des Insectes, 1752, Vol. I., pp. 517-541. pl. xxxvii.

² Arch. f. Naturgeschichte, Band I., pp. 194-211, pl. xiv.

³ From the Twenty-fifth Annual Report of the Mass. Agri. College, 1888.